

SYSTEMATIC STUDY OF THE GENUS *Kennelia* REBEL FROM CHINA
(LEPIDOPTERA, TORTRICIDAE, OLETHREUTINAE)

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Abstract Three species of the genus *Kennelia* Rebel, 1901 are reported from China, including one new species, *K. apiconcava* sp. nov. Photographs of the adults and the genitalia are provided, and a key for the identification of the species is given.

Key words Lepidoptera, Tortricidae, Olethreutinae, Eucosmini, *Kennelia*, new species, China.

The genus *Kennelia* (Eucosmini) was erected by Rebel in 1901, with *K. xylinana* (Kennel, 1900) as the type species. It includes two species to date (Brown, 2005): *K. albifacies* (Walsingham, 1900) described from India and *K. xylinana* (Kennel, 1900) from Russia. Both species were previously recorded in China (Diakonoff, 1975; Kuznetsov, 2001), and we describe one new species in this paper. All the studied specimens, including the types, are deposited in the Insect Collection, College of life Sciences, Nankai University, Tianjin, China.

***Kennelia* Rebel, 1901**

Anomalopteryx Kennel, 1900: 157. [preoccupied]

Kennelia Rebel, 1901: 263.

Type species: *Anomalopteryx xylinana* Kennel, 1900.

Diagnosis. The genus *Kennelia* is characterized by the costal margin strongly sinuate, more or less prominent at 2/3 or 3/4 on the forewing. It is closely related to *Ancylis* Hübner [1825] in genitalia, but can be distinguished from the latter by the sacculus lacking a distinct angle, the signum absent, and the costal margin of the forewing strongly sinuate. In *Ancylis* Hübner, the sacculus is distinct, the signum is blade-shaped, and the costal margin is not sinuate on the forewing.



Figs. 1-2. Adults of *Kennelia* spp. 1. *K. apiconcava* sp. nov. 2. *K. xylinana* (Kennel).

Key to the species of *Kennelia* Rebel based on the male genitalia

- 1 Uncus expanding terminally, apex truncate; socius obtusely triangular; neck broad, 1/2 × width of cucullus 2

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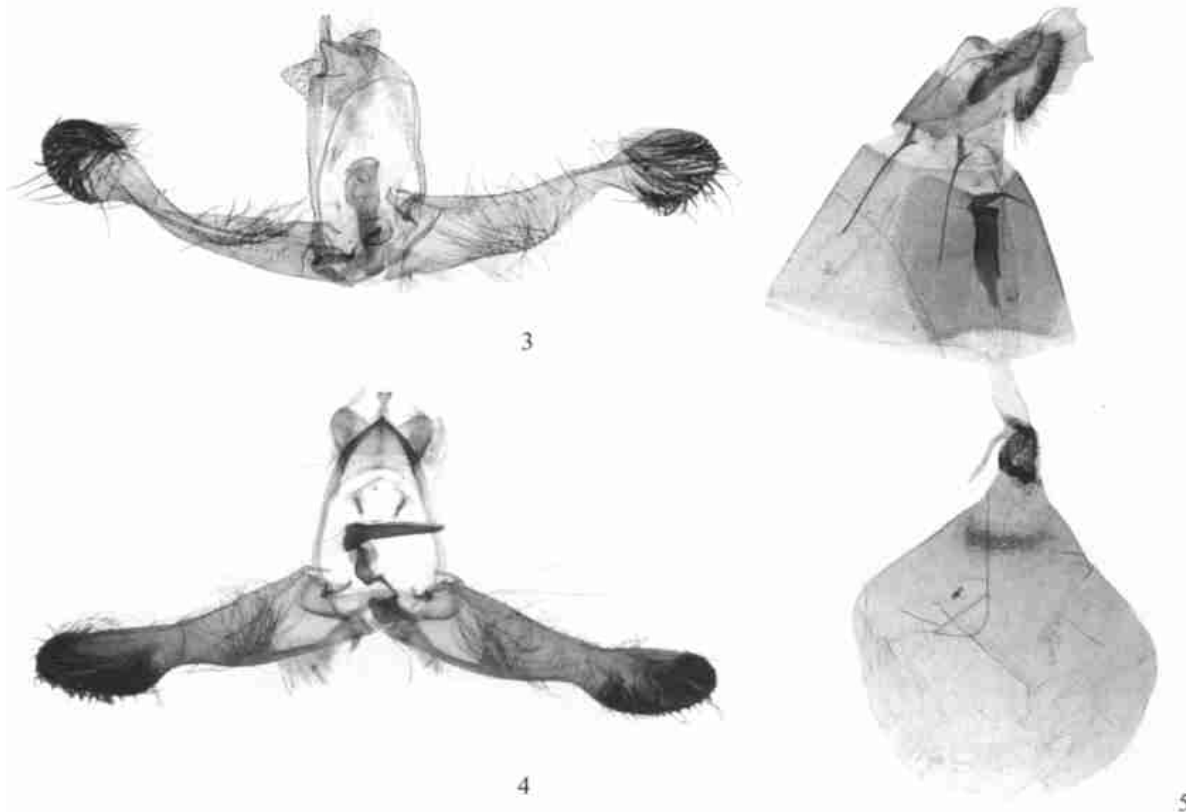
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- Uncus not expanding terminally, apex concave; socius acutely triangular; neck narrow, $1/4 \times$ width of cucullus
 *K. apiconcava* sp. nov.
- 2 Uncus slender, width of apex $1/2 \times$ length of uncus; cucullus obliquely oval *K. xylinana* (Kennel)
- Uncus robust, length $1/2 \times$ width of apex; cucullus sub-circular
 *K. albifacies* (Walsingham)

Kennelia apiconcava sp. nov. (Figs. 1, 3)

Adult (Fig. 1). Wing expanse 13.5-14.0 mm. Vertex, frons and antenna brownish. Labial palpus brownish, $1.5 \times$ diameter of eye; third segment slightly drooping. Thorax brown. Tegula grayish brown mixed with white. Forewing with costal margin sinuate, prominent at $2/3$, concave before apex; apex sub-rectangular, slightly prominent; termen straight

below apex, forming a right angle with the costa at the apex; upperside ground color brownish except apex blackish, wing with scattered dark brown streaks and spots throughout; fasciae undefined; costa having a small semioval dark grey spot at middle, with six pairs of strigulae from base to apex: each pair of strigulae with a white stria; first to fourth pairs spreading between base of the wing and the point where Sc meets costa; fifth and sixth pairs marking between postmedian and terminal fasciae, confluent to the point where R_5 meets termen; underside grayish brown; cilia gray. Hindwing with upperside grayish brown, cilia gray intermitted with brown; underside grayish brown. Legs yellowish, tarsus of fore leg with dark brown rings. Abdomen yellowish.



Figs. 3-5. Genitalia of *Kennelia* spp. 3. *K. apiconcava* sp. nov. (ZAH03695,). 4. *K. xylinana* (Kennel) (ZX05182,). 5. *K. xylinana* (Kennel) (ZX05183,).

Male genitalia (Fig. 3). Tegumen long. Uncus slender, not expanding terminally; apex concave, "M"-shaped. Socius acutely triangular. Valva long and narrow; basal cavity short, length $0.2 \times$ that of valva, setose; angle of sacculus indistinct; neck narrow, $1/4 \times$ width of cucullus; cucullus circular, densely bristled. Aedeagus broad and short; cornuti consisting of a bunch of deciduous spines.

Female. Unknown.

Type material. Holotype , Simao (22°48' N, 100°58' E), Yunnan Province, 1500 m, 22 Sep. 2000, coll. BU Wen-Jun, genitalia slide no. ZAH03695. Paratype 1 , same data as holotype.

Diagnosis. This new species is similar to *K. xylinana* (Kennel) in the male genitalia, but can be differentiated from it by the following characters:

forewing length shorter, uncus not expanding terminally and apex concave, socius acutely triangular, neck narrow and 1/4 width of cucullus, cucullus subcircular. In the latter species, forewing length longer, the uncus expands terminally and the apex is truncate, the socius is roundly triangular, the neck is broad and 1/2 width of cucullus, and the cucullus is obliquely oval.

Distribution. China (Yunnan).

Etymology. The specific name is derived from the Latin prefix *apic-*, meaning apex, and *concavus* meaning concave, referring to the apex of uncus.

***Kennelia albifacies* (Walsingham, 1900)**

Lipsotelus albifacies Walsingham, 1900: 570.

Argyroplœce corthyntis Meyrick, 1909: 596.

Kennelia albifacies (Walsingham, 1900), Diakonoff, 1975: 312.

Distribution. China (Taiwan), India, Sri Lanka.

Remarks. This species was described by Walsingham from India. The figures of genitalia are provided by Diakonoff (1975), who recorded this species from Taiwan, China in 1975. The holotype is deposited in the Natural History Museum, London, England (BMNH).

***Kennelia xylinana* (Kennel, 1900) (Figs. 2, 4, 5)**

Anomalopteryx xylinana Kennel, 1900: 158; Kennel, 1916: 450.

Kennelia xylinana (Kennel, 1900), Diakonoff, 1975: 311; Kawabe, 1982: 172; Razowski, 1989: 188; Byun et al., 1998: 168; Razowski, 1999: 490; Kuznetsov, 2001: 350.

Lipsotelus xylinanus Liu & Li, 2002: 289.

Adult (Fig. 2). Wing expanse 15.0-19.0 mm.

Male genitalia (Fig. 4). As illustrated.

Female genitalia (Fig. 5). As illustrated.

Material examined. 40, 7, Yuzhong County (35°53' N, 104°06' E), Gansu Province, 2 120-2 230 m, 29 July - 4 Aug. 1993, coll. LI Hour-Hun; 2, Yangling (34°17' N, 108°04' E), Shaanxi Province, 14-18 July 1985, coll. LI Hour-Hun; 2, 2, Jiuzhaigou (33°17' N, 103°54' E), Sichuan Province, 1 400-2 350 m, 16-18 Aug. 2002, coll. HAO Shu-Lian; 1, Jingyuan County (35°29' N, 106°19' E), Ningxia Hui Autonomous Region, 2 400 m, 8 Aug. 2000, coll. LI Hour-Hun and WANG Shu-Xia; 4, 2, Wufeng County (30°12' N, 116°40' E), Hubei Province, 1 000-1 100 m, 11-12

July 1999, coll. LI Hour-Hun; 1, Neixiang County (33°02' N, 111°50' E), Henan Province, 1 350 m, 14 July 1998, coll. LI Hour-Hun; 3, 1, Mt. Tianmu (30°26' N, 119°34' E), Zhejiang Province, 1 140-1 500 m, 17-18 Aug. 1999, coll. LI Hour-Hun; 1, Laiyuan County (39°21' N, 114°41' E), Hebei Province, 1 300 m, 20 July 2000, coll. YU Hai-Li; 1, Chicheng County (40°55' N, 115°50' E), Hebei Province, 850 m, 20 July 2001, coll. DU Yan-Li and HAO Shu-Lian; 1, Mt. Xiaowutai (39°57' N, 115°02' E), Weixian, Hebei Province, 800 m, 20 Aug. 2005, coll. XIAO Yun-Li; 1, Shennongjia (31°45' N, 110°40' E), Hubei Province, 1 200-1 400 m, 17 July 2003, coll. HAO Shu-Lian; 8, 1, Wolong County (30°59' N, 103°08' E), Sichuan Province, 1 900 m, 7-9 Aug. 2004, coll. REN Ying-Dang; 1, 1, Wolong County, Sichuan Province, 2 008 m, 25 July 2005, coll. YU Hai-Li; 2, Baoxing County (30°22' N, 102°50' E), Sichuan Province, 1 100-1 600 m, 1-2 Aug. 2004, coll. REN Ying-Dang; 1, 1, Erdao County (43°21' N, 125°39' E), Jilin Province, 730-1 010 m, 2-4 Aug. 2004, coll. ZHANG Ai-Huan; 1, Daozhen County (28°53' N, 107°36' E), Guizhou Province, 1 370 m, 25 Aug. 2004, coll. XIAO Yun-Li; 1, 1, Jixian (40°02' N, 117°24' E), Guizhou, 550 m, 24 June 2001, 13 July 2005, coll. LI Hour-Hun.

Distribution. China (Gansu, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Jilin, Ningxia, Shaanxi, Sichuan, Zhejiang), Korea, Japan, Russia (Far East).

Host plants. *Rhamnus ussuriensis* J. Vass. and *R. davurica* Pall. (Rhamnaceae) (Kuznetsov, 2001; Liu and Li, 2002).

Remarks. This species is similar to *K. albifacies* in both appearance and the male genitalia, but can be distinguished from it by the slender uncus, its apical width 1/2 × length, and the cucullus obliquely oval. In the latter species, the uncus is robust, with length 1/2 × apical width, and the cucullus is sub-circular.

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REFERENCES

- Brown, J. W. 2005. Tortricidae (Lepidoptera). World Catalogue of Insects, 5: 741 pp.
- Byun, B. K., Bae, Y. S. and Park, K. T. 1998. Illustrated Catalogue of Tortricidae in Korea (Lepidoptera). In: Park, K. T. (ed.), Insects of Korea, ser 2, 317 pp.
- Diakonoff, A. 1975. New Tortricoidea (Lepidoptera) from Southeast Asia in the British Museum (Natural History). Zoologische Meded., 48 (26): 290-320.
- Hübner, J. 1825. Verzeichniss bekannter Schmetterlinge [sic], Augsburg (1816- [1825]), 431 pp.
- Kawabe, A. 1982. In: Inoue, H., Sugi, S., Kuroko, H., Moriuti, S. and Kawabe, A. (eds.), The Moths of Japan. Volume 1. Text., 966 pp. Volume 2. Plates and Synonymic Catalogue. Kodansha, Tokyo. 552 pp.
- Kennel, J. 1900. Neue paläarktische Tortriciden, nebst Bemerkungen über einige bereits beschriebene Arten. Deutsche ent. Zeitschr. Iris, 13: 124-159.
- Kuznetsov, V. I. 2001. Tortricidae. In: Ler, P. A. (ed.), Key to the Insects of Russian Far East. Vol. V. Trichoptera and Lepidoptera. Pt. 3, Vladivostok Dal'nauka. 621 pp.
- Liu, Y-Q and Li, G-W 2002. Lepidoptera, Tortricidae. Fauna Sinica. Science Press, Beijing. 27: 463 pp.
- Meyrick, E. 1909. Descriptions of Indian Microlepidoptera. Bombay J. Nat. Hist. Soc., 19: 582-607.
- Walsingham, L. 1900. In: Swinhoe, C. (ed.), Catalogue of Eastern and Australian Lepidoptera Heterocera in the collection of the Oxford University Museum. Part , Noctuina, Geometrina and Pyralidina. Pterophoridae and Tineina by the Right Hon. Lord Walsingham and J. H. Durrant, Oxford. 630 pp., 8 pls.
- Razowski, J. 1989. The Genera of Tortricidae (Lepidoptera). Part : Palaearctic Olethreutinae, Acta Zoologica Cracoviensia, 32 (7): 107-328.
- Razowski, J. 1999. Catalogue of the Species of Tortricidae. Part : Palaearctic Eucosmina and Enarmoniina (Insecta: Lepidoptera). Sociedad Hispano-Luso-Americana de Lepidopterologia, Revista Lepidopterologia, 27 (108): 489-499.

中国尖顶小卷蛾属系统学研究 (鳞翅目, 卷蛾科, 新小卷蛾亚科)

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摘 要 尖顶小卷蛾属 *Kennelia* 全世界已知 2 种, 中国均有分布。本文记录 3 种, 包括 1 新种: 凹尖顶小卷蛾 *K. apiconcava* sp. nov.。文中给出了尖顶小卷蛾属的分种检索表, 提供了成虫图和外生殖器特征图。研究标本及模式标本均保存在南开大学生命科学学院昆虫标本室。

新种与鼠李尖顶小卷蛾 *K. xylinana* (Kennel) 在雄性外

生殖器上相似, 两者的主要区别是: 前者较后者个体小; 爪形突末端凹陷呈“M”状, 不膨大; 尾突端部尖锐; 抱器瓣颈部很细, 约为抱器端宽的 1/4; 抱器端近圆形。鼠李尖顶小卷蛾 *K. xylinana* (Kennel) 个体较大; 爪形突端部膨大, 末端平截; 尾突端部钝圆; 抱器瓣颈部粗, 约为抱器端宽的 1/2; 抱器端斜卵圆形。

关键词 鳞翅目, 卷蛾科, 新小卷蛾亚科, 花小卷蛾族, 尖顶小卷蛾属, 新种, 中国。

中图分类号 Q969.42